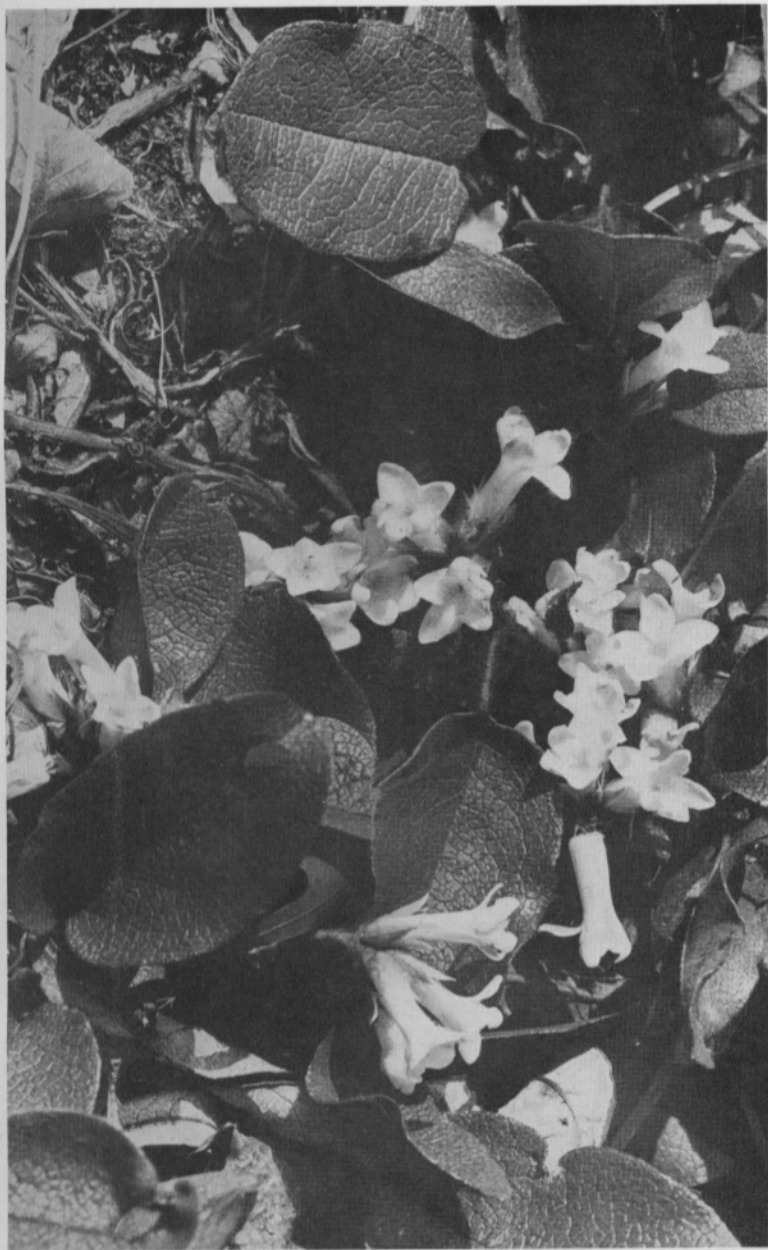


TRAILING ARBUTUS (*Epigaea repens*)



AN ANNOTATED FLORA OF THE CHICAGO AREA

*With Maps and Many Illustrations from
Photographs of Topographic and Plant
Features.*

By H. S. PEPOON, B.S., M.D., Head In-
structor in Botany and Agriculture,
Lake View High School.



CHICAGO, ILLINOIS
1927



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CHICAGO

DEDICATED
TO THE MEMORY OF
PROFESSORS

C. J. Hill

DEAN OF ALL CHICAGO BOTANISTS
AND

Levi M. Umbach

BEST OF FRIENDS
AND MOST ENTHUSIASTIC OF
PLANT COLLECTORS.

FOREWORD

IT is a long time since we have had available a Flora of the Chicago Region. Many years ago Higley and Raddin published under the auspices of the Chicago Academy of Sciences, a Flora, of Cook County, Illinois, and Lake County, Indiana. The supply of this has long been exhausted. For many years Dr. H. S. Pepoon, of the Lake View High School, has been vigorously active in the study of the flora of Chicago and vicinity, and for a long time he has had in preparation a Flora of the Chicago Region, which would take the place of the Higley and Raddin volume, so long out of print. The present volume is much more complete than the earlier Flora. It has descriptions and keys and a considerable body of descriptive text lacking in the older work. It is very fitting that the Chicago Academy of Sciences should publish this book also, and it deems itself peculiarly fortunate in having the services of so competent a man as Dr. Pepoon, and in having the opportunity to publish the volume at this time.

HENRY C. COWLES, *President*
Chicago Academy of Sciences.

PREFACE

AFTER many years of preparation and many more of waiting, THE FLORA OF THE CHICAGO REGION is presented to the public with the hope expressed that the delay has brought to those who read a more completely finished and to that extent, at least, a more satisfactory production.

Many of the matters that might with propriety be taken up in the preface, have for fuller consideration, been placed in the introduction. It is, however, needful to bring to the attention of those who use the book, a number of important facts offered either as explanation of matter inserted, or in recognition of valuable assistance rendered.

As to the completeness of the catalog, it is probably unnecessary to say that no flora is ever complete, for plants like all other living things come and go. What may be found today may be missing tomorrow, and for this reason, reference has been made many times to plants given a place in the list, which may be now exterminated, absent for a time, or, which, as solitary waifs from far regions may live precariously for a time and then vanish. Their introduction, however, has a definite value and need not be defended.

The botanists of the United States are divided into two more or less hostile groups when the matter of nomenclature is considered. A large proportion of the teachers, many field collectors, and a host of other plant lovers use Gray's manual and have so used it for years. Many botanists, particularly those having to do with the scientific activities or explorations of our government, take Britton and Brown as their chief authority. Others, chiefly monographers of small groups are largely a law unto themselves, using any name that to them appears proper. In this work the catalog name is taken from Gray, the synonym from Britton and Brown.

Regarding the keys used for the determination of particular plants, several things must be made emphatic :

PREFACE

1.—No attempt is made to make keys for grasses, sedges, rushes, pondweeds, and similar very difficult groups. With these the trained specialist has his troubles, and for the untrained private citizen they may be considered hopeless.

2.—They are original and while largely used by the author to test their working value, they are, like all keys, subject to failure now and then. Whatever their good or bad points, any criticism will be cheerfully accepted.

3.—The keys are distributed through the Flora where they are to be used, except certain general ones that cover much ground. It is hoped that this will prove a helpful feature.

4.—It is expected that the introduction of special keys for trees, shrubs, and vines will be a feature to be appreciated by those of little botanical training. In this connection the author desires to express his hearty thanks to Mr. V. O. Graham for his fine key for trees in winter.

5.—Keys are artificial, not elastic, not easily adapting themselves to the multitudinous variations of the living things they seek to "run down," and so must be used with good sense and discrimination. Finally, the author is under lasting indebtedness to many, acting either in association or as individuals, for the assistance given in so many ways that has made possible the publication of the Flora :

To the Chicago Academy of Sciences for its faith in the writer, and its vital financial support.

To the officers and office force of the Academy, who in every possible manner rendered assistance, particularly in the trying days of proof reading.

To the friends who so cheerfully furnished photographs that the work might be suitably illustrated.

And, in conclusion, in an especial manner, to Mr. Frank M. Woodruff whose wonderful skill in photography has so often been called on in the illustrations of this book.

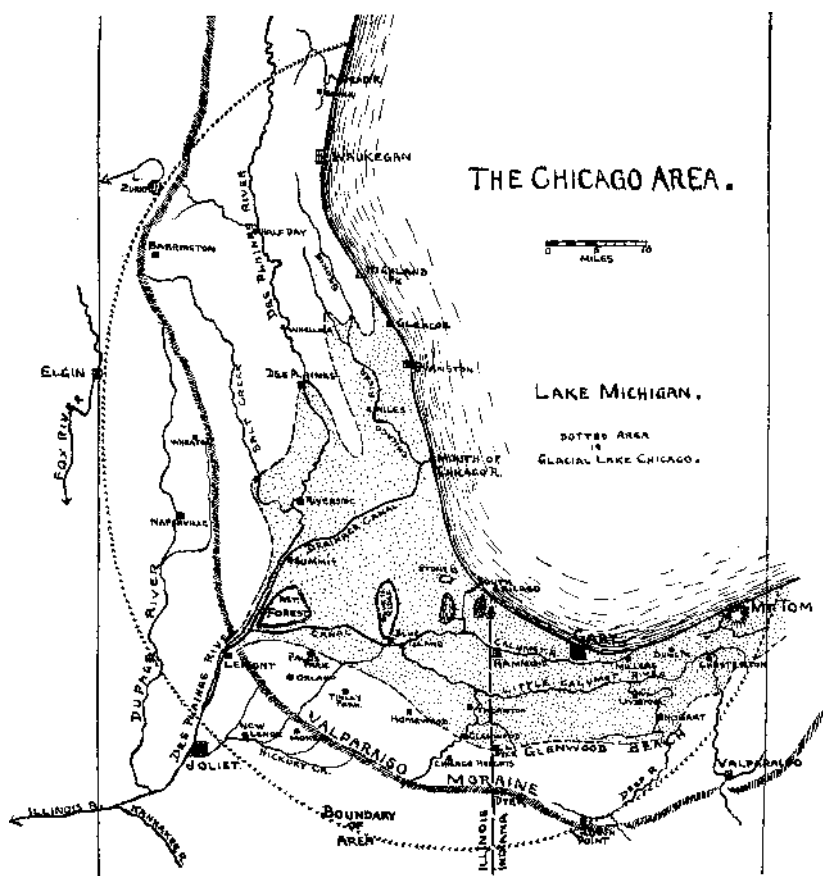
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ABBREVIATIONS OF AUTHORS' NAMES

A. Br.	Alexander Braun.	DC.	Augustin Pyramus De Candolle.
Adans.	Michel Adanson.	Dcne.	Joseph Decaisne.
A. DC.	Alphonse De Candolle.	Desf.	R��n�� Louiche Desfontaines.
Ait.	William Aiton.	Desr.	Desrousseaux.
All.	Carlo Allioni.	Desv.	Augustin Nicaise Desvaux.
Anders.	Nils Johan Anderson.	Dietr.	Albert Dietrich.
Andrz.	Anton Lukianowicz Andrzejowski.	Dougl.	David Douglas.
Arn.	George A. Walker Arnott.	Dumont.	G. L. M. Du Mont de Courset.
Asch.	Paul Ascherson.	Dumort.	Barthelemy C. Dumortier.
B. & H.	George Bentham and Joseph Dalton Hooker.	Ehrh.	Friedrich Ehrhart.
Bab.	Charles Cardale Babington.	Ell.	Stephen Elliott.
Barn.	F. Marius Barneoud.	Endl.	Stephan Ladislaus Endlicher.
Beauv.	A. M. F. J. Palisot de Beauvois.	Engelm.	George Engelmann.
Benn.	Arthur Bennett.	Forst.	J. R. & George Forster.
Benth.	George Bentham.	Fourn.	Eugene Fournier.
Bernh.	Johann Jacob Bernhardt.	Froel.	Joseph Aloys Froelich.
Bess.	Wilhelm S. J. G. von Besser.	Gaertn.	Joseph Gaertner.
Bigel.	Jacob Bigelow.	Gaud.	Charles Gaudichaud-Beaupr��.
Boeckl.	Otto Boeckeler.	Gilib.	Jean Emmanuel Gilibert.
Boiss.	Edmond Boissier.	Gmel.	Samuel Gottlieb Gmelin.
Borkh.	M. B. Borkhausen.	Good.	Samuel Goodenough.
Brit.	Nathaniel Lord Britton.	G. & G.	Charles Grenier and Dominique Alexandre Godron.
B. S. P.	Nathaniel Lord Britton, E. E. Sterns, and Justus F. Poggenberg.	Griseb.	Heinrich R. A. Grisebach.
Burm. f.	Nikolaus Laurens Burman.	Guss.	Giovanni Gussoni.
C. & S.	Adalbert von Chamisso and D. F. L. von Schlechtendal.	Hack.	Eduard Hackel.
C. A. Mey.	Carl Anton Meyer.	Hassk.	Justus Carl Hasskarl.
Casp.	Robert Caspary.	Hau.	Carl Haussknecht.
Cass.	Henri Cassini.	Haw.	Adrian Hardy Haworth.
Cav.	Antonio Jos�� Cavanilles.	H. B. K.	Alexander von F. Humboldt, Aim�� Bonpland, and C. S. Kunth.
Celak.	Ladislav Celakovsky.	Heg., Hegel.	Friedrich Hegelmaier.
Cerv.	Vicente Cervantes.	Hitchc.	Albert Spear Hitchcock.
Chapm.	Alvan Wentworth Chapman.	Hochst.	Christian F. Hochstetter.
Chois.	Jacques-Denis Choisy.	Hoffm.	George Franz Hoffmann.
Coult.	John Merle Coulter.	Hook.	William Jackson Hooker.
Cyrill.	Domenico Cyrillo.	Hornem.	Jens Wilkin Hornemann.
C. & R.	John Merle Coulter and Joseph Nelson Rose.	Huds.	William Hudson.
Darl.	William Darlington.	Jacq.	Nicolaus Joseph Jacquin.
Davenp.	George Edward Davenport.	J. F. Gmel.	Johann Friedrich Gmelin.

Karst.	Hermann Karsten.	Rostk.	F. W. G. Rostkovius.
Kl.	Johann Friedrich Klotsch.	Rottb.	Christen Fries Rottboell.
L.	Carl von Linné or Linnaeus.	Rupr.	Franz J. Ruprecht.
Lag.	Mariano Lagasca.	Rydb.	Per Axel Rydberg.
Lam.	J. B. A. P. Monnet La- marck.	Salisb.	Richard Anthony Salis- bury.
Lamb.	Aylmer Bourke Lambert.	Sarg.	Charles Sprague Sargent.
Leavenw.	Melines C. Leavenworth.	Sart.	Henry P. Sartwell.
Lehm.	J. G. C. Lehmann.	Schkur.	Christian Schkuhr.
Less.	Christian Friedrich Lessing.	Schleich.	J. C. Schleicher.
Lest.	Lestiboudois.	Schleid.	Matthias Jacob Schlei- den.
L' Her.	C. L. L'Héritier de Brutelle.	Schrad.	Heinrich Adolph Schra- der.
Lightf.	John Lightfoot.	Schreb.	Johann D. C. von Schre- ber.
Lindl.	John Lindley.	Schwein.	Lewis David de Schwei- nitz.
MacM.	Conway MacMillan.	Scop.	Johann Anton Scopoli.
Man. Ed. 6	Gray's Manual, Edition Sixth.	Scribn.	Frank Lamson-Scribner.
Marsh.	Humphrey Marshall.	Shuttlw.	Robert Shuttleworth.
Max.	Carl Johann Maximo- wicz.	Sibth.	John Sibthorp.
Meisn.	Carl Friedrich Meisner.	Sm.	James Edward Smith.
Merr.	Elmer D. Merrill.	Spreng.	Kurt Sprengel.
Mey.	Ernst Heinrich Meyer.	Steud.	Ernst Gottlieb Steudel.
Michx.	André Michaux.	Sud., Sudw.	Sudworth.
Mill.	Philip Miller.	Sulliv.	William Starling Sulli- vant.
Moench.	Otto Freiherr von Moenchhausen.	Sw.	Olaf Swartz.
Moq.	Alfred Moquin-Tandon.	T. & C.	John Torrey and Asa Gray.
Muell.	Jean Mueller.	Thunb.	Carl Pehr Thunberg.
Muhl.	G. H. E. Muhlenberg.	Torr.	John Torrey.
Murr.	Johann Andreas Murray.	Tourn.	Joseph Pitton de Tour- nefort.
Nees.	Christian Gottfried Nees von Esenbeck.	Trel.	William Trelease.
Nutt.	Thomas Nuttall.	Trev.	Christian Ludolf Trevi- ranus.
Pall.	Peter Simon Pallas.	Trin.	Karl Bernhard Trinius.
Parl.	Filippo Parlatore.	Tuckerm.	Edward Tuckerman.
Pers.	Christian Hendrik Per- soon.	Underw.	Lucian Marcus Under- wood.
Planch.	Jules Emile Planchon.	Vent.	Etienne Pierre Ventenat.
Poir.	Jean Louis Marie Poiret.	Vill.	Dominique Villars.
Poll.	Johann Adam Pollich.	Wahlenb.	Georg Wahlenberg.
R. & S.	J. J. Roemer and August Schultes.	Wallr.	K. F. W. Wallroth.
Raf.	C. S. Rafinesque- Schmaltz.	Walp.	Wilhelm Gerhard Wal- pers.
R. Br.	Robert Brown.	Walt.	Thomas Walter.
Reich., Reichenb.	H. G. L. Reichenbach.	Wang.	F. A. J. von Wangenheim.
Rich., Richards.	John Richardson.	Wats.	Sereno Watson.
Roem.	M. J. Roemer.	Wed.	H. A. Weddell.
		Willd.	Carl Ludwig Willdenow.
		With.	William Withering.



THE CHICAGO AREA

GENERAL INTRODUCTION TO THE FLORA

SOME thirty years have passed since the Flora of the Chicago Area was published and in those years a number of forces have been at work, which by their combined agency have largely rendered the printed record uncertain, incomplete, or wholly at variance with the conditions as they exist today.

A more extended knowledge of the physiographic features brought about by the publications of Leverett and others has awakened a far stronger realization of the dependence of plants upon the historical sequence that, working through long periods of time, has carved upon the face of our Mother Earth the present peculiarities of the areal surface. The modern interpretations of the ecologist have caused a very general interest in the distribution of plants and the complex causes of their choice of habitat, inexplicable by the wisdom of the ancients, have often had an explanation that was clear and comprehensive.

Many facts of relationship have been discovered in these thirty years, many new and better arrangements of groups, large and small, more in accord with the exact demands of scientific accuracy, have been worked out. New terms have been invented and new nomenclature has, in a large degree, replaced the old.

A thorough understanding of the physiography of the regions adjacent to Chicago has somewhat extended our borders, although in the main, they remain largely as in the former work. The most noteworthy divergence has been northward where the limits are placed in the moorland north of Waukegan. Justification for these extensions of limits, great or small, is to be had in the following points :—(1) A natural exterior limit is the Valparaiso moraine which embraces on its lakeward side most of Lake Chicago, and the drainage slope adjacent to it. This morainal crest coincides largely with the limits chosen southeast and northwest. There is

some overstepping along the west boundary by reason of nearness to the Area center and the north shore limit is admittedly arbitrary. (2) A second consideration of great weight is that great extensions of suburban and interurban lines of communication have rendered it a simple matter in time and cost to reach the most extreme locality of the area thus marked out. It seems almost a necessity to include all regions that can be explored in a half-day's outing, this area thus becoming the botanical suburbs of Chicago. (3) A third feature of no small weight has been the tremendous extension of the city countrywise, the extinction of many rich plant localities of two decades ago by this encroachment of urban improvements and the consequent compulsion of seeking farther afield for botanical specimens of interest or rarity.

The area as thus extended may be compared to a distorted ellipse, the center being the mouth of the Chicago River, the transverse axis about forty-five miles in length, the vertices being the Waukegan Moor and Mt. Tom respectively. The conjugate axis, with a length of about thirty-five miles from the river mouth to a point midway between Naperville and Aurora, takes in the full width of the Valparaiso moraine excluding the immediate bluffs and valley of the Fox River. Probably three-fourths of this area was occupied by Lake Chicago and its tributary drainage slope.

As thus limited, there are found six well-marked floral areas largely coterminous, with marked physiographic features of controlling influence. These are (1) The Waukegan Sands and Marshes, (2) The North Shore and Adjacent Regions, (3) The Des Plaines River Valley and Drainage Basin, (4) The Western Morainal Ridge and Slopes, (5) The Southern Morainal Area, (6) The Southeastern Dunes, Sands, and Flats.

Each of these very interesting and natural areas is considered in separate papers in this work, details of surface topography and other determining factors being accorded their due proportion of influence. Those who have undertaken these general reviews of the floral areas, while working separately, have woven a fabric that is continuous in pattern, and with the warp and woof of verified

observation have given to the plant loving citizens a product that ought to be a daily necessity in the future work of collection and exploration in the region under discussion.

In the Annotated List that makes up the body of *The Flora* are to be found all plants reported to the date of this introduction, April, 1926. It has seemed best for purposes of record and preservation to give place to all plants that have been found, irrespective of whether these finds were unique or of common occurrence. A number, however, are certainly not now extant in our area and are listed in the Addenda. It is certain that the numbers of this section will gradually increase under the destroying influence of urban activities. For the present, however, it is hoped and believed that there is here presented a nearly perfect record of the condition that now exists.

The basic area of *The Flora* being the drainage basin and ancient floor of Glacial Lake Chicago, a concise review of our knowledge concerning this body of water is necessary for a complete understanding of the topographic features and the consequent distribution of plant life. When the Michigan Lobe of the Late Wisconsin Glacier was at its greatest extent, its front occupied a great curve that is now marked by the Valparaiso moraine, extending along the southern end of the present Lake Michigan from southwest Michigan to northeast Illinois, distant from ten to twenty miles from its shore.

As the ice cap receded northward a deep basin was exposed that was filled with the waters of the melting glacier, forming a lake now known as Glacial Lake Chicago. This lake had several shore lines, the highest, some fifty feet above Lake Michigan (mean level 581 feet), being known as the Glenwood Beach, from the village of that name situated upon it. The dammed-up waters found an outlet southwestward over a possible low portion of the moraine into what is now the lower Des Plaines River Valley, where a channel a mile or more in width was carved through former glacial deposits into the underlying Niagara limestone, leaving in fact the only extensive rock record found in our area.

Thus the Lake level was gradually lowered until a long stationary period caused a second marked beach formation, the

Calumet, having an elevation above datum of thirty-five feet. Between this beach and the Glenwood there was an intervening space varying from practically nothing to a couple of miles or more of flat lands as is well shown in the town of Jefferson east of Dunning.

A second period of marked subsidence followed by a stationary stage produced the Tolleston Beach (20 feet above Lake Michigan), which as a rule was far separated from the Calumet Beach by a wide flat so extensive that a large part of the present city of Chicago is accommodated upon it. Between this Beach and the present shore line are several imperfect beach formations not distinct enough over large extent for special designation.

The beaches when well marked are very characteristic linear abrupt elevations, the steep slope being an eastern one in most cases, commonly bearing numerous groves of bur oaks, with occasional other types of forest trees. These ridges are variously made up of sands, gravels, and mixtures of all sorts. They often branch and occasionally disappear or flatten and broaden. Now and then small dune formations are found. In many places they have been chosen for city streets or country roads. They are very pronounced at their northern termination at Winnetka, and equally so in many other localities.

The flat lands between the beaches are usually glacial clays, overlaid with loam, sand or peaty formations, and often wet and marsh-like by reason of imperfect drainage. They constitute the large area of " original prairie " adjacent to Chicago, possessing at the present time probably more of this variety of topography than exists elsewhere in Illinois.

Between the Tolleston Beach and Lake Michigan the soil is almost everywhere sand or gravel, with many parallel ridges alternating with peat depressions. This was originally an oak forest, mostly black oaks, though much has been exterminated in the growth of the city and suburbs. As one passes southward and eastward the ridges assume more and more dune-like character, until the true dunes of Indiana are reached.

Above the general level of Lake Chicago two or three elevations of note were present : the large area known as Mount Forest Island

at the southwest, between the north and south channels of out-flow into the Des Plaines; Blue Island, north of the suburb of that name, also forest covered and with well marked dunes along its western front ; and Stony Island, near South Chicago, a lower elevation with a planed and grooved rock surface but thinly covered with earth. Two other areas of shallow rock are at Halsted and 45th, and on Western Avenue, near Grand, and each had originally characteristic floras, now exterminated by the city's growth.

Meandering through this lake floor were and are two water courses, one a live stream, the North Branch of the Chicago River and the other a remnant of flood days gone by, the Ogden Ditch, partly artificial but largely the work of the Des Plaines River overflows. It shows markedly the low elevation or divide between the Mississippi and St. Lawrence systems at this point and bears mute testimony of the ancient days when the waters of Lake Michigan were in fact a part of the former, and a mighty stream flowed on either side of Mount Forest Island, out of the southwest angle of Lake Chicago, which later united and carved in part the present great valley of the Illinois, comparable with that of the upper Mississippi.

As this flood broke through the height of land near Summit, Sag, and beyond, natural rock cliffs and erosion canyons in miniature were finally produced by the wearing waters, so that here today on a limited scale are the only natural rock outcrops of our area with their peculiar flora, living proofs of the effect of topography upon plant life and distribution.

The Area, as may be surmised from what has preceded, is rich in marsh, prairie, and sand forms, but very scanty representations of rock species are to be found. Owing to its being the scene of great glacial activity in the forefront of a great ice lake, a remarkable feature is the commingling of northern and southern forms about the head of Lake Michigan, giving rise by all these agencies to one of the most extensive and varied floras of temperate regions.

In conclusion it is particularly appropriate, in a work giving the exact localities of growth of so many rare and beautiful plants,

that most urgent and emphatic stress be placed upon the imperative necessity of a conservation of this flora. In the bygone days and extending too certainly into the present no thought was taken of any possible harm that might come to plant life by indiscriminate and immoderate picking of bouquets and collections of plants for class study or herbarium purposes. The supply was supposed to be inexhaustible and the gathering justified as a necessity for botanical education or record of species for future use in schools and colleges.

And so the work of demolition went on. Every botanist had a can great or small that carried home from the field tens and hundreds of specimens. In truth much use was made of this material and many an ardent lover of flowers today was first prompted to plant study by this expedient. But what can be said of the ever increasing horde of picnickers who, descending upon the fields and woods in spring, summer, and fall, bore as a trophy upon returning to their city homes, a great bunch of phlox, trilliums, geraniums, or what not. It was ostensibly, and to that extent praiseworthy, to gladden the eyes and hearts of the stay-at-homes. The folly of the proceeding, however, was in the fact that not one bouquet in a hundred ever reached its intended destination, for, wilting in the heated hand of the gatherer, and aided by the hot air of sun and wind, the pretty things were soon thrown away, littering the march of the merry-makers as ruins mark the progress of victorious armies.

The time is come, therefore, to call a halt on these methods, however much of good they may seem to have on cursory examination, and to oppose with every reasonable weapon of logic and persuasion at our command, this wholesale gathering of flowers, that leads in most cases to no end whatever but the immediate discarding of the gathered beauties and ultimate depletion or extermination of the flowers. To this consummation, the following suggestions are made for the consideration of all flower lovers :

First—A publicity campaign, through the medium of clubs, societies, schools, and periodicals, acquainting all citizens of the rapidly approaching danger and inviting co-operation in every possible manner.

Second—The discouragement in practical ways' of the displaying for sale by our florists of all wild flowers, fruits, ferns, and foliage. The writer met a youth in the fall, a few years ago, who told him that he, the youth, had thus far gathered something like a ton of the northern holly berries for Chicago florists. The young man spent his entire time, had made several hundred dollars, and on the day in question had a great pack of holly twigs, with their brilliant scarlet fruits, that must have weighed sixty pounds. He must have utterly despoiled from sixty to one hundred shrubs to have obtained this store. At another time a man was encountered with eight hundred and eighty-five showy lady's slipper stalks and blooms. A third confessed to having gathered in one day fourteen hundred and fifty white water lily blooms.

Since this paragraph was originally written the State of Illinois has enacted and has spread upon its Statutes the following Law pertaining to the conservation of several of our rarest and most beautiful wild flowers. The section is quoted in its entirety for the guidance of all flower lovers and as a warning to all flower gatherers.

AN ACT FOR THE
CONSERVATION OF CERTAIN
WILD PLANTS IN THE STATE OF
ILLINOIS. Approved June 21, 1923 —
In force July 1, 1923.

Section 1. *be it enacted by the people of tin State of Illinois, represented in the General Assembly:* That any person, firm or corporation who shall, within the State of Illinois, knowingly buy, sell, offer, or expose for sale any bloodroot (*Sanguinaria canadensis*), lady's slipper (*Cypripedium parviflorum*, and *Cypripedium hirsutum*), columbine (*Aquilegia canadensis*), trillium (*Trillium grandiflorum*, and *Trillium sessile*), lotus (*Nelumbo lutea*) or gentian (*Gentiana crinita* and *Gentiana Andrewsii*), or any part thereof, dug, pulled up or gathered from any public or private land, unless in the case of private land the owner or person lawfully occupying such land gives his consent in writing thereto, shall be deemed guilty of misdemeanor, and shall be punished by a fine of not less than \$10.00 nor more than \$100.00 and costs.

Section 2. All prosecutions under this act shall be commenced within six

months from the time such offence was committed and not afterwards.

THE WILD FLOWER PRESERVATION
SOCIETY
(Illinois Chapter)

Do you know the trillium, lady's slipper, gentian, bloodroot, columbine, and lotus?

Do not pick them.

Leave them to beautify the earth.

Illinois is losing the loveliest of her native flowers.

Love your state and preserve her beauty.

Picking a flower destroys its seeds.

Pulling stems disturbs roots.

Breaking branches from a tree cripples it.

Be a lover, be an enjoyer, be a protector of flowers.

Let them cover the earth and give joy to all of us.

You can help by joining the Wild Flower Preservation Society.

Write for membership.

Invite your friends to become members.

Third—The revision of flower studies in our High Schools and Colleges, so that flowers and flower families may be comprehended through the medium of samples and not by wholesale job lots, the finishing touch to the floral education being given in the field in the presence of the growing plants.

Fourth—The taking up of the problem by every teacher who has aught to do with nature study work and the solution by instruction, pledges for pupil and parents, and all other approved means, so that the oncoming generation may grow up conservationists instead of vandals.

Fifth—A very favorable and powerful aid to conservation of our wild life, plant and animal, has lately come into existence, in the Forest Preserve District of Cook County, which is acquiring title as fast as possible to many thousands of acres of what is left of our natural woodland and stream borders. This bids fair to become the greatest single force ever put into action to stay the destruction of our wild flowers, trees, and bird life. But it will be vastly crippled in its effectiveness unless the preceding educational propaganda is carried out to the fullest possible degree.

The author urges upon every user of *The Flora* that he ever keep in mind the perishable nature of the wild folk he studies and that, in so far as he has power and influence, he exert both to the conservation of all of our natural heritage that remains to us, never needlessly maiming nor destroying one of our floral or arboreal citizens, but ever protecting them with zealous care from ruthless hands or ignorant caprice.